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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/615,757

07/09/2003

Robert W. Healey

57382/02-234

9895

22206

7590

08/19/2004

FELLERS SNIDER BLANKENSHIP  
BAILEY & TIPPENS  
THE KENNEDY BUILDING  
321 SOUTH BOSTON SUITE 800  
TULSA, OK 74103-3318

EXAMINER

IP, SHIK LUEN PAUL

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/615,757

**Applicant(s)**

HEALEY, ROBERT W.

**Examiner**

Paul Ip

**Art Unit**

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/1/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on 4/1/04 in compliances with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the field effect transistor 52 connected in series with the field effect transistor 58 for providing the reverse voltage protection. The recitation of a single field effect transistor in claim 1 fails to particularly point out and distinctly claim the subject matter of the reverse voltage protection field effect transistor 58 with respect to the pwm control of the field effect transistor 52 of the motor.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  
  
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (6,247,980) or Healey et al (6,507,164) in view of Freymuth (4,636,711), or Moore et al (5,939,908), or Hazelton et al (6,043,965), or Pakkala et al (6,154,081).

With respect to claims 1-4, the patents to Moore et al '980 and Healey et al '164 disclose trolling motor control system. Moore et al '980 show in figure 2 and Healey et al show in figures 2 & 3 the trolling motor driving circuits. Whereas claims 1-4 recite a field effect transistor having a drain connection connected to the first battery lead, a source connection in electrical communication with the electric motor, and a gate connection in communication with the second battery lead. However, the patents to Freymuth '711, Moore et al '908, Hazelton et al '965, and Pakkala et al '081 disclose reverse voltage protection for motor/load comprising a field effect transistor having a bias diode with the gate, the drain, and the source connections in communication with the battery leads and the motor/load. Since reverse voltage or polarity causes serve damage to the trolling motor control circuit and the motor, one of ordinary skill in the art would look for a solution to protect the reverse voltage/polarity protection for the trolling motor control circuit and the motor. It would have been obvious to one of ordinary skill in the art to provide Moore et al '980 or Healey et al '164 with the reverse voltage/polarity protection as taught or suggested by Freymuth '711, or Moore et al '908, or Hazelton et al '965, or Pakkala et al '081.

#### ***Citation of Pertinent References***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patents/publications to Motz et al (6,556,400), Miller "5,939,863), Orton (5,107,387), Strayer et al (2004/0150927), and Petruska (2002/0118497, 2002/0118496, 6738239) are reverse voltage protection circuits comprising a field effect transistor with a biasing diode for reverse voltage/polarity protection.

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The patents to Cummins (6,483,268), Kurita et al (2003/0107340), Mourad et al (6,369,533), Albach et al (5,514,942), and Grady (6,252,363) disclose motor control circuits comprising a field effect transistor for controlling the motor.

***Customer Services Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Ip whose telephone number is (571)-272-1941. The examiner can normally be reached on Monday to Friday from 6:30 a.m. to 3:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (571)-272-1207. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul Ip  
Primary Examiner  
Art Unit 2837